CENTRAL MACHINERY®

5-SPEED DRILL PRESS

Model 38119

SET UP AND OPERATING INSTRUCTIONS

Distributed exclusively by Harbor Freight Tools®.

3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: http://www.harborfreight.com

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

Copyright© 1998 by Harbor Freight Tools®. All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.

For technical questions or replacement parts, please call 1-800-444-3353.

Revised 08a

THANK YOU for choosing a Harbor Freight Tools product! For future reference, please complete the owner's record below:

Model: _____ Serial No: _____ Purchase Date: _____

SAVE THE RECEIPT, WARRANTY CARD AND THESE INSTRUCTIONS. It is important that you read the entire manual to become familiar with the unit BEFORE you begin assembly.

TECHNICAL SPECIFICATIONS

Power Source: 1/3 HP, 120 V~, 60 Hz, Single Phase

Speeds: 620, 1100, 1720, 2340, 3100 RPM

Drill Chuck Capacity: 1/2"

Maximum Spindle Stroke: 2"

Maximum Distance from Chuck to Table: 6-3/4"

Maximum Distance from Chuck to Base: 10"

Maximum Swing: 9-1/2"

Column Diameter: 1.89"

Table Size: 6-5/16" x 6-1/2"

Overall Dimensions: 23" x 7" x 17"

Base Size: 7" x 11-1/8"

UNPACKING

Unpack and check contents. Make sure you have all parts described in the Parts Lists and **Figure 1** on page 3.

Remove all preservative lubricants from parts with a clean dry cloth.

Some of the parts are heavy and may require two people for lifting.

If any parts are missing or broken, please call Harbor Freight Tools at 1-800-444-3353. The shipping box should contain:

A. Table Assembly
B. Column Assembly
C. Instruction manual and warranty card
D. Base
E. Head assembly
F. Head Assembly
G. One (1) bag of loose items

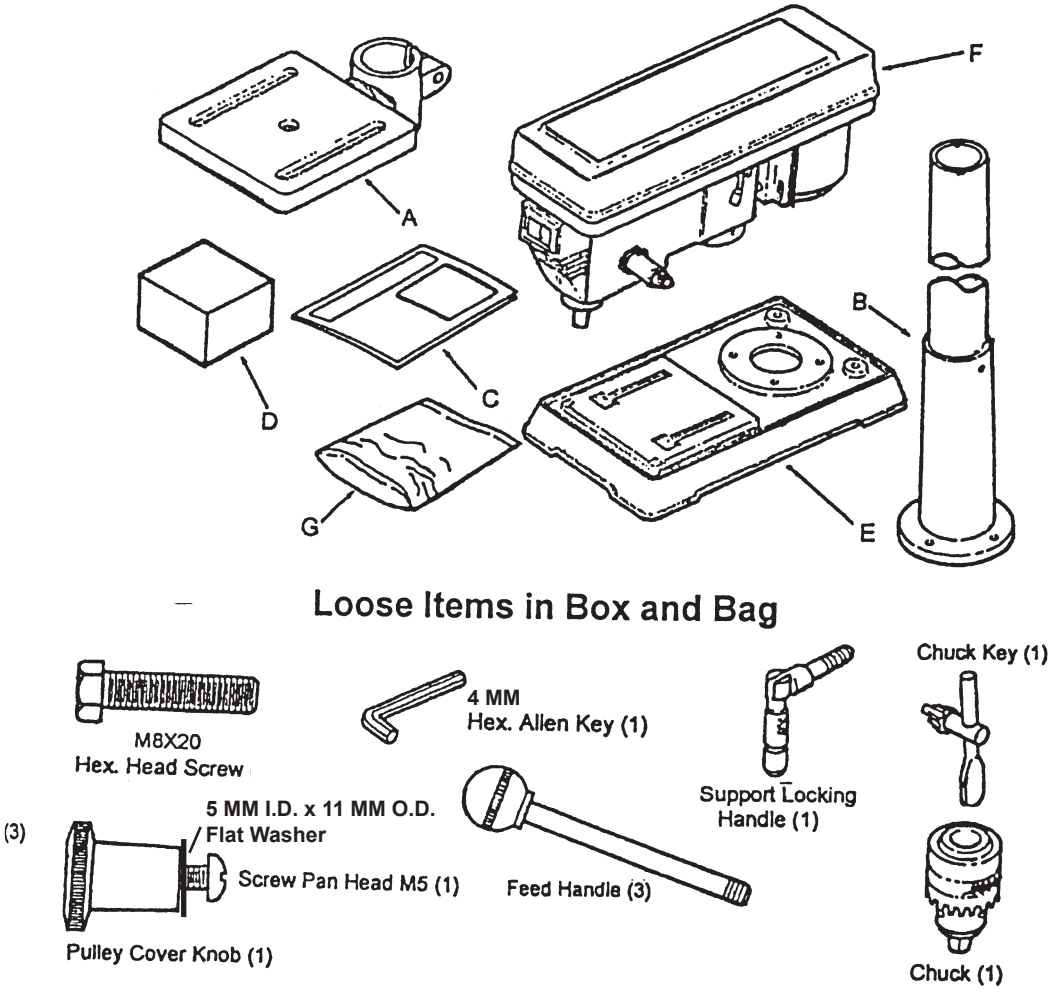
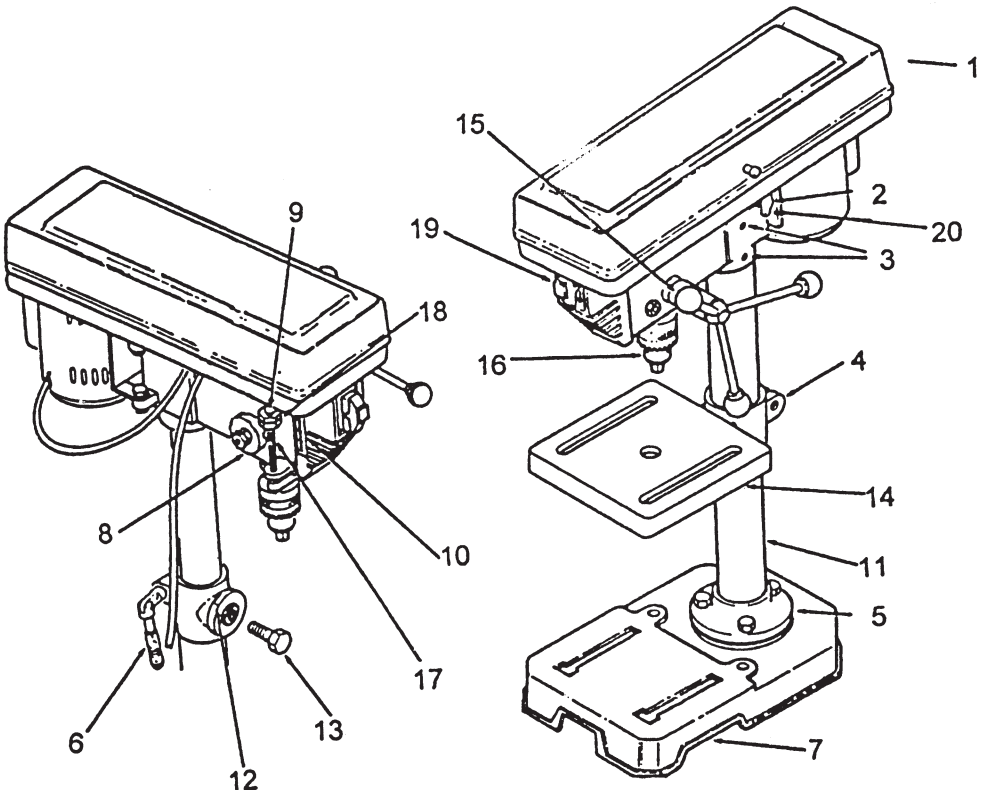


Figure 1

KNOW YOUR DRILL PRESS



1. Pulley Cover
2. Belt Tension Locking Screw
3. Head Lock Set Screws
4. Table Support
5. Column Support
6. Table Support Locking Handle
7. Base
8. Quill Spring Assembly
9. Pointer
19. Switch
10. Depth Scale
11. Column
12. Bevel Scale
13. Table Lock Set Screw
14. Table
15. Feed Handles
16. Chuck
17. Feed Stop Rod
18. Stop Nuts
20. Motor Stop

IMPORTANT SAFETY INSTRUCTIONS!

READ ALL INSTRUCTIONS BEFORE USING THIS PRODUCT!

Work Area

TO AVOID RISK OF PERSONAL INJURY, EQUIPMENT DAMAGE, FIRE AND SHOCK, MAKE SURE YOUR WORK AREA IS:

1. Free of damp, wet or rainy conditions
2. Free of flammable gasses or liquids
3. Childproof - use padlocks, master switches and remove starter keys when not in use.
4. Well-lit and well-ventilated

5. Clean and uncluttered

The Operator

COMMON SENSE AND CAUTION ARE FACTORS WHICH CANNOT BE BUILT INTO ANY PRODUCT. THESE FACTORS MUST BE SUPPLIED BY THE OPERATOR. PLEASE REMEMBER:

1. Prevent body contact with grounded surfaces such as pipes or radiators.
2. Stay alert. Never operate equipment if you are tired.
3. Do not operate the product if under the influence of alcohol or drugs. Read warning labels on prescriptions to determine if your judgment/reflexes might be impaired.
4. Do not wear loose clothing or jewelry as they can be caught in moving parts.
5. Non-skid footwear is recommended.
6. Wear restrictive hair covering to contain long hair.
7. Use eye and ear protection. Always wear:
   a. ANSI-approved dust mask or respirator when working around metal, wood, and chemical dusts and mists.
   b. A full face shield if you are producing metal or wood filings.
   c. Ear protectors
8. Maintain proper footing and balance at all times.
9. Do not reach over or across running machines.
10. Always check that adjusting keys and wrenches are removed from the tool or machine work surface before plugging it in.

Before Operating

1. Know the machine. Learn its applications and limitations, as well as the specific potential hazards.
2. Check for damage. If part of the machine is damaged, it should be carefully inspected to ensure that it can perform its intended function correctly. If in doubt, the part should be replaced.
3. Be sure the switch is OFF before plugging in.
4. Before starting machine check to ensure that all chuck keys, spanners and wrenches are removed from the machine.
5. Make sure guards are in place and working properly.
6. Make sure tool has been cleaned and properly lubricated.
7. Check for damaged parts. Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function.
8. Check for alignment and binding of all moving parts, broken parts or mounting fixtures and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician.
9. Do not use the tool if any switch does not turn off and on properly.

Operation

1. This drill press is designed for use with DRILL BITS and MORTISING ATTACHMENTS only. The use of other cutting tools or accessories could be hazardous.
2. Always use clamps, or a drill vise bolted to the table, to hold the work. It should never be held in place by just your hand.
3. Never force the tool or attachment to do the work of a larger industrial tool. It is designed to do the job better and more safely at the rate for which it was intended.
4. Always unplug the cord by the plug. Never yank the cord out of the wall.
5. Always turn off the machine before unplugging.
6. With normal use, the motor housing may get hot.
7. Make all adjustments to the machine with the power OFF.
8. Never stand on the machine. Serious injury could occur if the machine is tipped over.
9. Always use the correct drilling speeds for the drill size and the type of material being drilled.
10. Never leave the drill unattended while it is running.
11. When turning off the machine, never leave unit it has come to a complete stop.
12. Never hold material to be drilled with your bare hands. Damage to the machine may also occur if the flung material strikes the column.

IF THERE IS ANY QUESTION ABOUT A CONDITION BEING SAFE OR UNSAFE, DO NOT OPERATE THE TOOL.

ASSEMBLY

CAUTION! Consider the weight of the components and take necessary precautions when lifting components. **Assistance will be required when assembling.**

Before adjustments are made, ensure that the machine is SWITCHED OFF AND UNPLUGGED. Also make sure all locking handles and securing screws are FULLY TIGHTENED when adjustments are completed.

Before assembling, remove all traces of preservative from the components and wipe all parts thoroughly with a clean dry cloth. Apply a thin coating of light machine oil to the table, column and base to prevent rust.

Part Numbers described below refer to illustration on page 4

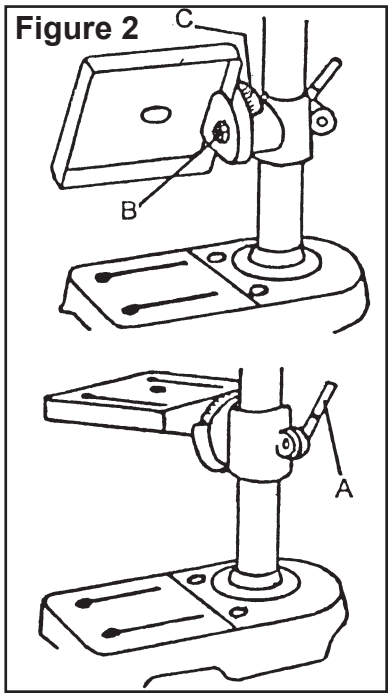


Figure 2

Table to Column

1. Thread the Table Support Locking Handle (#6) into the Table Support (#4) from the left hand side, and leave it loose until later.

2. Slide the Table Support with Table over the Column (#11) and secure at a convenient position by tightening the Table Support Locking Handle.

Head to Column

1. It may be necessary to unscrew the Head Lock Set Screws (#3) slightly to ensure they do not protrude internally, as this will prevent the head from sliding fully into position.
2. With assistance, raise the Head and place it on top of the Column, ensuring it slides home fully.
3. Align the head with the base (#7), and firmly secure with the Head Lock Set Screws (#3).
4. Screw the three Feed Handles (#15) firmly into the hub of the Feed Shaft.

Installing the Chuck

1. With the Chuck Guard lifted clear of the spindle nose, slide the work table up the column to within 6” of the spindle.
2. Open the jaws of the chuck to their maximum, using the Chuck Key supplied.
3. Put a piece of scrap wood on the table to protect the Chuck Nose.
4. Ensuring all parts are thoroughly clean and dry and burr free, place the chuck over the end of the spindle, and pull the spindle down using the feed handles, pressing the chuck jaws hard against the piece of scrap wood until the chuck is forced home.

Pulley Cover Knob

1. Locate the knob with pan head screw and attach to the cover.
2. Screw on tightly.

Adjusting the Drive Belt

The drive belt is pre-installed. However, if the belt requires tightening or the spindle speed needs to be changed, proceed with the following steps:

1. Undo the Belt Tension Locking Screw to loosen the belt.
2. Consult the chart inside the pulley cover (or the Drill Speed chart in this manual), and install the belt in the position corresponding to spindle/drill speed required.
3. Lever the motor, on its bracket, away from the head, so that tension is applied to the belt. Tension is correct when the belt deflects by approximately 1/2” at its center when using reasonable thumb pressure. Lock the motor in this position using the locking screw.

Note: If the belt slips during operation, adjust the belt tension.

SETTINGS AND ADJUSTMENTS

Before adjustments are made, ensure that the machine is SWITCHED OFF AND UNPLUGGED. Also make sure all locking handles and securing screws are FULLY TIGHTENED when adjustments are completed.

TO ADJUST THE TABLE

The table is capable of being raised, lowered, or swiveled about the column by:

1. Slackening off the table support locking handle (A), adjusting accordingly, and re-tightening the handle; or,

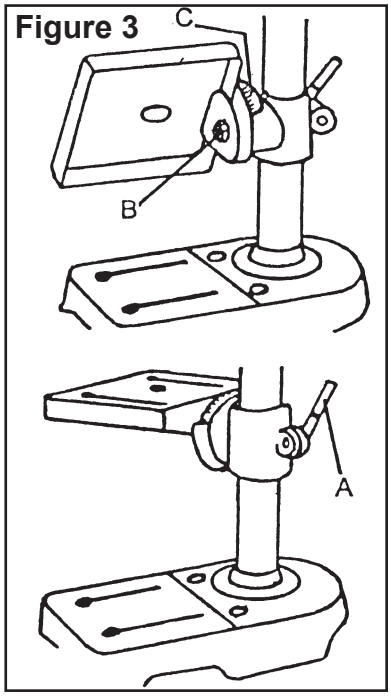
2. It may also be tilted by loosening the Set Screw (B), tilting to the required position, (up to 45 degrees in either direction) and re-tightening the Set Screw.

SETTING THE REQUIRED ANGLE

1. A Bevel Scale (C), provided on the table mounting, is measured in degrees to assist in setting the required angle. For all normal operations the table should be set at 0° **(see Figure 3)**.

2. To ensure the drill is entirely perpendicular to the table, insert a piece of straight round bar in the chuck, place a square on the table and bring it up to the round bar. Adjust the table tilt if necessary so that the table is correctly aligned.

Figure 3



TO SET DRILLING DEPTH

Located on the left side of the drill head (G) is the Spindle Feed (or depth feed) adjuster assembly, which allows the depth of the hole to be set. The procedure for setting the drilling depth is as follows **(See Figure 4)**:

1. Lower the Chuck (F) until the drill contacts the surface of the workpiece and hold that in position.

2. Screw down the adjuster nut (B) so that the gap between its underside and face (E) is the depth of the hole required.

3. Screw down nut (C) and lock it against the adjuster nut (B).

The drill is now set to drill holes to your predetermined depth from that particular start point (i.e., providing the surface of your workplace is flat and level, you may drill a series of holes, each to the same depth.

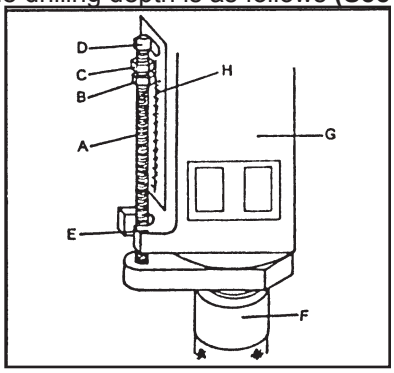


Figure 4

The scale (H) and pointer (D) can be used to drill one off, by lowering the chuck — as explained above in “To Set Drilling Depth” section — until the drill contacts the work, setting the pointer (D) against a set point on the scale (H), switching the drill ON and proceeding to drill to the required depth using the scale (H) as a guide.

CHANGING DRILL (SPINDLE) SPEED

Before changing the speeds, make sure the machine is switched OFF and UNPLUGGED.

1. Open the pulley cover.
2. Slacken off the Belt Tension Locking Screw to relieve any tension on the drive belt.
3. Consult the chart inside the pulley cover (or **Figure 5** on page 10) and position the belt on the pulleys according to the spindle/drill speed required
4. When the belts have been correctly positioned, tighten them by levering the motor away from the head until the belt deflects by approximately 1/2" at its center when using reasonable thumb pressure. Lock the motor in this position with the Belt Tension Locking Screw.

DRILL SPEED TABLE

The table below shows the belt arrangements for given drill speeds (A full chart is also located on the inside of the pulley cover). In the diagram, the belts are fitted to Step Three of the Spindle Pulley, producing a drill speed of 1,720 RPM.

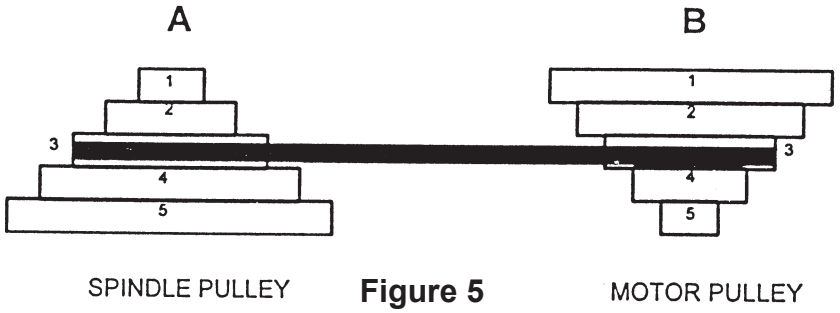


Figure 5

Spindle Pulley Step	Spindle Speed (RPM)
1	3100
2	2340
3	1720
4	1100
5	620

OPERATION

1. Insert the drill into the jaws of the chuck approximately 1", ensuring that the jaws do not touch the flutes of the drill. Before tightening the chuck, ensure that the drill is centered within the jaws. Refer to **Figure 6**.
2. Make sure the table height and position is set so that the drill travel range is sufficient for the material to be drilled.
3. Make sure the work is securely clamped. That is, held in a drill vice, or bolted to the table. Never hold the material with your bare hands while drilling. Severe personal injury may be caused if the material is flung out of the operator's hand.
4. IF THE MATERIAL IS IRREGULARLY SHAPED and cannot be laid flat on the table, it should be securely blocked and

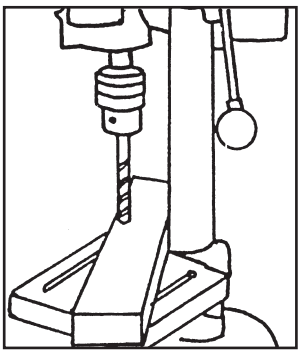


Figure 6

clamped. Any tilting, twisting or shifting will result not only in a roughly drilled hole but also increases the chances of damage to the drill.

5. FOR FLAT WORK, lay the piece on to a wooden base and clamp it down firmly against the table to prevent it from turning.

6. FOR SMALL MATERIALS that cannot be clamped to the table, use a drill press vice. Make sure the vice is clamped or bolted to the table.

7. WHEN DRILLING COMPLETELY THROUGH WOOD, always position a piece of scrap wood between the material and the table to prevent splintering on the underside of the material as the drill breaks through. The scrap piece of wood must make contact with the left side of the column as shown in **Figure Five**. Also, set the depth of the drill so that the drill will not come in contact with the table - or align the table so that the hole in its center is in line with the drill bit.

8. Once the instructions above have been followed, lower the Chuck Guard into place and switch the machine ON .

Note: A micro switch is provided inside the Pulley Cover that prevents the machine from operating unless the Pulley Cover is firmly closed.

Cutting Speeds

Factors which determine the best speed to use in the drill press operation are:

a. Type of material to be drilled

b. Size of hole

c. Type of drill bit

d. Quality of the hole/cut desired.

Generally, the SMALLER THE DRILL BIT the GREATER THE REQUIRED RPM. In soft material, the speed should be higher than for hard metals. As a guide, the drill speed for a given drill bit size is listed in the chart below.

SPEED RANGE	(RPM)	3100	2340	1720	1100	620
Wood	in	3/8	5/8	7/8	1-1/4	1-5/8
	mm	9.5	18	22	31.75	41.4
Zinc Diecast	in	1/4	3/8	1/2	3/4	7/8
	mm	6.4	9.5	12.5	19	25.4
Aluminum & Brass	in	7/32	11/32	15/32	11/16	3/4
	mm	5.6	8.75	12	17.5	19
Mild Steel & Iron	in	3/32	5/32	1/4	3/8	1/2
	mm	2.4	4	6.4	9.5	12.5

AFTER OPERATION

1. Remove all debris from the machine and thoroughly clean all surfaces.

2. Make sure all components are dry and machined surfaces lightly oiled.

3. Remove drill bits and store in a safe place.

4. Child-proof the machine and work area. Make sure to use padlocks, master switches and remove starter keys.

GROUNDING/VOLTAGE WARNING

Common household current is 110-120 volts. As long as your tool is rated from 110-120V there will be no complications using this tool with household receptacles. Plug the press into a 110-120V properly grounded outlet protected by a 15-amp, dual element time delay or circuit breaker.

NEVER try to plug a 110-120V tool into a 220-240V circuit (or vice versa) or serious complications and possible injury to the operator may occur. The plugs have different shapes to prevent this.

This piece of equipment has a three-prong plug. The third (round) prong is the ground to protect the operator from electric shock. Cutting off the ground will result in a safety hazard and void the warranty.

IF THE OUTLET YOU ARE PLANNING TO USE IS THE TWO-PRONG TYPE, DO NOT REMOVE OR ALTER THE GROUNDING PRONG IN ANY MANNER. Use an adapter and always connect the grounding lug to a known grounding source. IT IS RECOMMENDED THAT YOU HAVE A QUALIFIED ELECTRICIAN REPLACE THE TWO-PRONG OUTLET with a properly grounded three-prong outlet.

Do not modify your plug in any way. If you have any doubt, call a qualified electrician.

EXTENSION CORDS

Your tool has a three-prong plug, therefore you must use a three-prong extension cord. Only use rounded jacket extension cords listed by the Underwriters Laboratories (UL).

The extension cord must have a minimum wire size depending on the amperage of the tool and the length of the extension cord. This size is determined by its AWG (American Wire Gauge) rating. The smaller the gauge, the greater the cable's capacity. The amount of cords used does not matter: Total length determines the minimum AWG rating. Every cord must meet the AWG rating. Use the chart below to determine what AWG rating is required for your situation. Cord length is rated in feet. **Harbor Freight Tools can supply UL listed and outdoor rated cords in multiple AWG ratings if needed**.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS*
(120/240 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	25'	50'	75'	100'	150'
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-

TABLE A *** Based on limiting the line voltage drop to five volts at 150% of the rated amperes.**

MAINTENANCE

CLEANING: Regularly clean the work surface with dry brush or clean cloth. Keep machined parts of the press lightly greased. Always keep the motor and chuck clean. Prevent metal, wood, dust and debris from accumulating in this area. If jaws do not operate smoothly, have the chuck serviced by a qualified technician.

LUBRICATION: For average use, lubricate twice a year with #20-30 weight household oil. Lubricate more frequently with increased usage.

POWER CORD: Inspect the power cord periodically and, if damaged, have it repaired by an authorized technician.

REPLACEMENT PARTS: Replace belts at the first sign of slippage or fraying. When servicing, use only identical replacement parts. Use of any other parts will void the warranty.

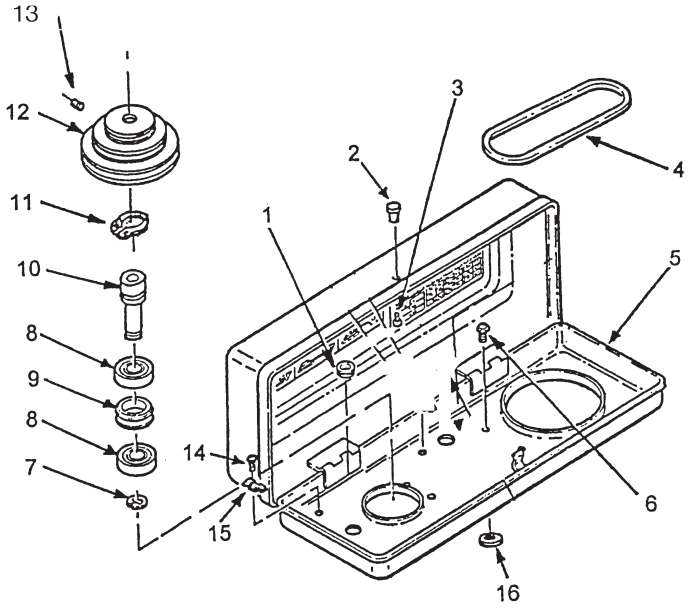
STORAGE: Always remove and store drill bits.

KEEP OUT OF REACH OF CHILDREN

Troubleshooting

PROBLEM	PROBABLE CAUSE	REMEDY
Noisy operation (under load)	• Incorrect belt tension • Dry spindle • Loose pulley • Loose belt • Worn bearing	• Adjust tension • Lubricate spindle • Tighten pulley • Adjust belt tension • Replace bearing
Excessive drill wobble	• Loose chuck • Worn spindle, or bearing • Worn chuck • Bent drill bit	• Tighten by pressing chuck down on to a block of wood against the table. • Replace spindle or bearing • Replace chuck • Replace drill bit
Motor won't start	• Power supply • Motor connection • Faulty switch • Motor windings burn	• Check power cord • Check motor connections • Replace switch • Replace motor
Drill binds in material	• Excessive pressure on feed handle • Loose belt • Loose drill bit • Incorrect drill speed • Drill angles incorrect for type of material	• Apply less pressure • Check belt tension • Tighten drill with key • Refer to Cutting Speed chart • Consult an appropriate source (e.g., manual, instruction book, professional) and adjust drill accordingly.
Drill burns or smokes	• Incorrect speed • Chips are not discharging • Dull drill or not the proper clearance allowed for material • Needs coolant • Feed pressure is wrong	• Refer to Cutting Speed chart • Clean drill • Use coolant while drilling • Apply less pressure
Table difficult to raise	• Needs lubrication • Table lock tightened	• Lubricate with light oil • Loosen clamp

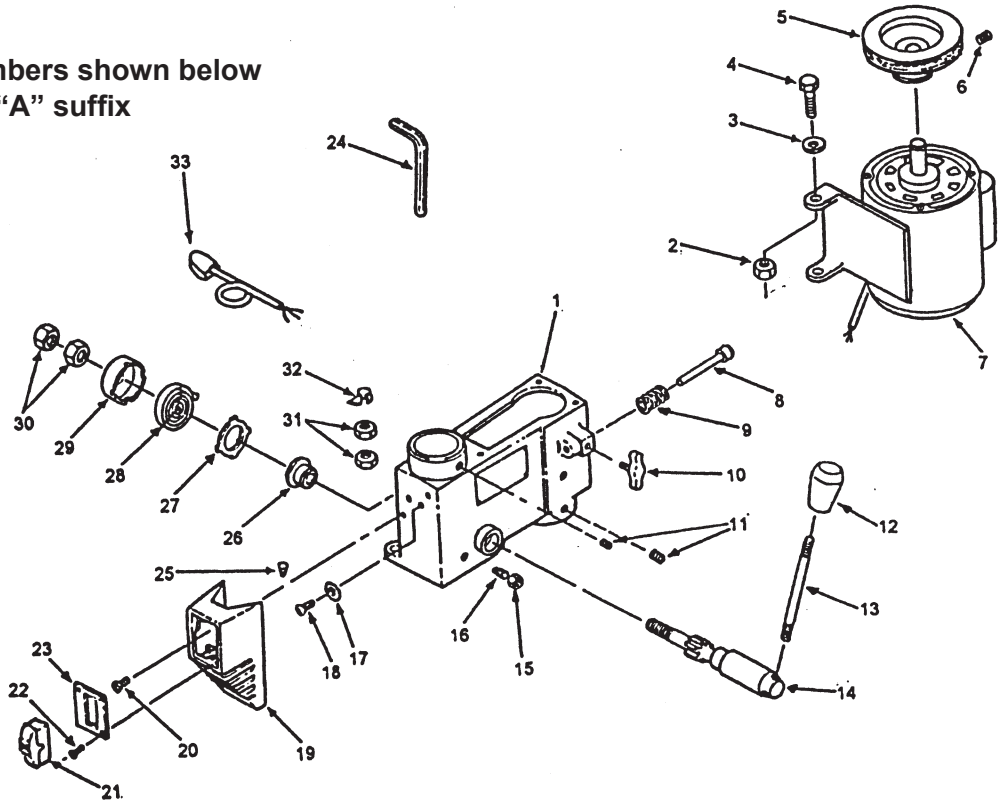
PARTS LIST - PULLEY ASSEMBLY (FIGURE 7)



Item	Description	No.
1	Rubber Bushing	2005010
2	Knob	1505008
3	Pan Head Screw	GB818-85
4	“V” Belt K26	0805007
5	Pulley Cover w/labels	0805000
6	Washer Hd. Screw M6	GB9074.1-88
7	Retaining Ring 17mm	GB894.1-86
8	Ball Bearing 60203	GB278-89C
9	Spacer	1302023
10	Pulley Insert	0802022A
11	Retaining Ring 22mm	GB894.1-86C
12	Spindle Pulley	0805006D
13	Hex Socket Set Screw	GB80-85
14	Pan Head Screw M5	GB818-85B
15	Cable Clamp	1502014A
16	Foam Washer	0805009

PARTS DIAGRAM - HEAD ASSEMBLY (FIGURE 8)

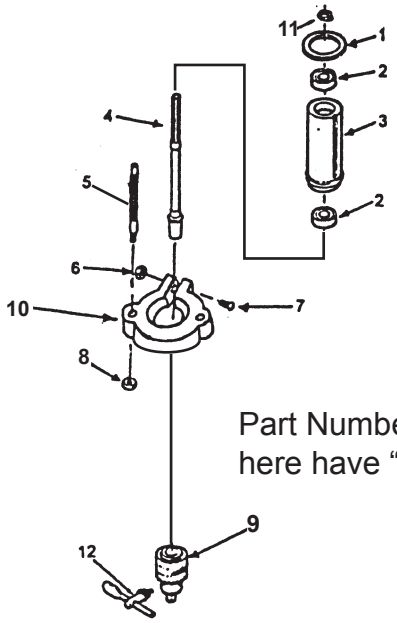
Part Numbers shown below have an "A" suffix



Item	Description	No.
1A	Head w/Roll Pin/trim	0802001
2A	Locknut M8	DIN985-85
3A	Washer 5/16	GB97.2-85
4A	Hex. Screw M8	GB5781-86A
5A	Motor Pulley	0805005B
6A	Screw Hex. Skt. M6	GB80-85A
7A	Motor	0802020B
8A	Stop Motor	0802002
9A	Spring (Motor Stop)	0802004
10A	Belt Tension Lock Screw	0802005
11A	Hex. Skt. Screw M8	GB80-85B
12A	Knob	0804011F
13A	Feed Handle	0804005F
14A	Pinion Shaft	0804002E
15A	Hex. Nut M8	GB6170-86C
16A	Fit Set Screw M8	0802021
17A	Ext. Lockwasher 5mm	GB862.1-87

Item	Description	No.
18A	Pan Head Screw M5	GB818-85B
19A	Switch Box w/Depth Scale	S0802008A
20A	Pan Head Screw M5	GB818-85B
21A	No Voltage Switch	1502010E
22A	Self Tapping Screw M5	GB845-85
23A	Switch Plate Cover	0802009B
24A	Allen Key 4mm	GB5356-85B
25A	Connector Wire	1302019
26A	Spring Seat	0804006
27A	Spring Retainer	0804007
28A	Quill Spring	0804009
29A	Quill Spring Cap	0804008
30A	Hex. Nut 3/8	n/a
31A	Hex. Nut M10	GB6171-86
32A	Pointer	0806002
33A	Power Cable	1302015F

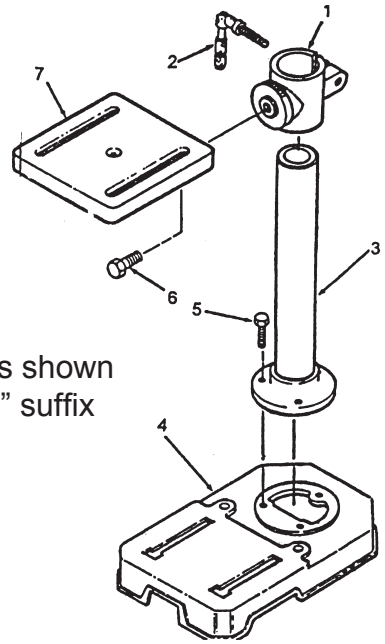
QUILL ASSEMBLY (FIGURE 9)



Part Numbers shown here have “B” suffix

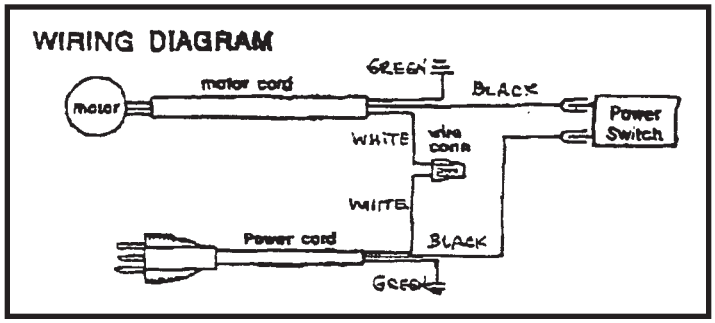
Item	Description	No.
1B	Quill Gasket	1303003
2B	Ball Bearing	GB278-89
3B	Quill Shaft	0803002A
4B	Spindle Shaft	0803001B
5B	Stop Rod	0803005
6B	Hex. Nut M4	GB6170-86
7B	Pan Hd. Screw M5x20	GB818-85
8B	Hex. Nut M6	GB6170-86
9B	Chuck	1303009
10B	Collar	0803004
11B	Retaining Ring	GB894.1-86
12B	Chuck Key	1303010

BASE AND TABLE (FIGURE 10)



Part Numbers shown here have “C” suffix

Item	Description	No.
1C	Table Support w/scale	0801004
2C	Table Spt. Lock Handle	0501013A
3C	Column Support	0801002/03
4C	Base	0801001
5C	Hex. Hd. Screw	GB5761-86
6C	Hex. Hd. Screw 1/2”	na
7C	Table	0801014



LIMITED 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353

ADDITIONAL SAFETY WARNINGS

1. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
2. This product contains or, when used, produces a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)